



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,655	11/16/2005	Masanori Naritomi	052496	1376

38834 7590 04/02/2010
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

KRUEK, KEVIN R

ART UNIT	PAPER NUMBER
----------	--------------

1787

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

04/02/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary

Application No.

10/533,655

Applicant(s)

NARITOMI ET AL.

Examiner

KEVIN R. KRUEER

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6 and 8-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB008)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 9, 2010 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 2, 5, 6, and 8-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the specification for the newly added limitation that the thermoplastic resin fills the fine recesses in the surface of the aluminum. While the specification teaches creating recesses on the surface of the aluminum and then applying a thermoplastic resin, there is no disclosure that the recesses are filled by the resin.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 8, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kallenbach (US 5,212,214) in view of Akihoshi (US 4,642,161).

Kallenbach teaches a substrate coated with an arylene sulfide composition comprising ceramic micro-sphere filler (herein relied upon to read on the claimed powder filler) (abstract). The particles may comprise silica (col 9, lines 60+). The substrate may comprise aluminum or aluminum alloys (col 9, lines 24+). Alternatively, it would have been obvious to utilize an aluminum-alloy rather than an aluminum substrate in order to improve the properties of the substrate layer.

Kallenbach does not teach the claimed pretreatment. However, Akihoshi teaches a treatment process for metal substrates such as copper (abstract) though the teachings are not limited to copper (col 7, lines 25+). Said treatment improves the adhesion of metal to plastics such as polyphenylene sulfide (col 7, lines 25+). The metal is treated immersed (col 5, lines 14+) in a solution of water and a substance selected from reducing agent such as hydrazine (col 4, lines 7+). Said treatment makes the aluminum substrate more susceptible to further coating treatments by utilizing the minute unevenness created by the removed oxide (col 2, lines 30+). The reaction is performed at 40-70C at concentrations of 0.1g/l or higher (col 4, lines 12+). The

immersion is continued until the reaction is completed. Thus, it would have been obvious to the skilled artisan to pre-treat the aluminum alloy with the treatment taught in Akihoshi in order to improve the adhesion between the substrate and the polyarylene sulphide coating. Furthermore, it would have been obvious to optimize the time, temperature, concentration, and selection of the reducing agent in order to optimize the surface roughness and enhance the adhesion.

6. Claims 1, 2, 5, 6, and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haak (US 20010036559) in view of Akihoshi (US 4,642,161).

.Haak teaches a substrate coated with an arylene sulfide composition (0016) comprising long fibers (abstract). The fibers may comprise glass fibers (0016). The substrate may comprise aluminum or aluminum alloys (claim 6). Alternatively, it would have been obvious to utilize an aluminum-alloy rather than an aluminum substrate in order to improve the properties of the substrate layer. The laminate is made by injection molding (0020-0022).

Haak does not teach the claimed pretreatment. However, Akihoshi teaches a treatment process for metal substrates such as copper (abstract) though the teachings are not limited to copper (col 7, lines 25+). Said treatment improves the adhesion of metal to plastics such as polyphenylene sulfide (col 7, lines 25+). The metal is immersed (col 5, lines 14+) in a solution of water and a substance selected from reducing agent such as hydrazine (col 4, lines 7+). Said treatment makes the aluminum substrate more susceptible to further coating treatments by utilizing the minute unevenness created by the removed oxide (col 2, lines 30+). The reaction is performed

at 40-70C at concentrations of 0.1g/l or higher (col 4, lines 12+). The immersion is continued until the reaction is completed. Thus, it would have been obvious to the skilled artisan to pre-treat the aluminum alloy with the treatment taught in Akihoshi in order to improve the adhesion between the substrate and the polyarylene sulphide coating. Furthermore, it would have been obvious to optimize the time, temperature, concentration, and selection of the reducing agent in order to optimize the surface roughness and enhance the adhesion.

Response to Arguments

Applicant's arguments filed February 9, 2010 have been fully considered but are not persuasive.

Applicant arguments filed January 8, 2010 were fully addressed in the Advisory Action of 1/25/2010. With regard to the newly filed supplemental response, applicant argues that the newly claimed "filling said fine recesses" limitation is supported on pages 12-14 of the specification. The specification has been reviewed and the examiner cannot find any explicit support for said limitation. Furthermore, it is not clear why said limitation should be understood to be implicitly supported by the specification. Applicant suggests the bonding of a thermoplastic resin to a surface comprising fine recesses inherently results in the filling of the fine recesses. Applicant, however, provides no evidence supporting said conclusion. Furthermore, if filling of the fine recesses is inherent, then it is unclear how said limitation distinguishes the claimed invention from the prior art.

With respect to the pending 103 rejection, Applicant argues Akahoshi fails to teach the claimed hydrazine monohydrate concentration, solution temperature, and size of the recesses formed. The examiner agrees but notes Akahoshi was never relied upon to explicitly teach said limitations. Rather, the examiner took the position that it would have been obvious to optimize the time, temperature, and concentration of the reducing agent in order to optimize the surface roughness (size of recess) of the metal substrate. The motivation for doing so would have been to enhance the adhesion of polymers to said metallic substrates (see col 4, lines 1+).

Applicant argues Akahoshi teaches the use of a specific reducing agent which is outside the scope of the presently claimed invention. Said argument is noted but is not persuasive as Akahoshi teaches hydrazine has traditionally been utilized as the reducing agent (col 3, line 58). Applicant is reminded that a reference may be relied upon for all that it fairly discloses and is not limited to preferred or inventive environments. Applicant further argues that the hydrazine taught in Akahoshi does not correspond to the claimed hydrazine monohydrate. The examiner respectfully disagrees and maintains the position that said chemicals are equivalent in an aqueous solution.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN R. KRUER whose telephone number is (571)272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin R Kruer/
Primary Examiner, Art Unit 1794